INTERSTATE COMMERCE COMMISSION

WASHINGTON

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INVESTIGATION NO. 2579

THE CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA RAILWAY COMPANY

REPORT IN RE ACCIDENT

AT SAVAGE, MINN., ON

APRIL 11, 1942

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SUMMARY

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| Railroad: | Chicago, St. Paul, Minneapolis & Omaha | |
| Date: | April 11, 1942 | |
| Location: | Savage, Minn. | |
| Kind of accident: | Rear-end collision | |
| Trains involved: | Passenger | : Passenger |
| Train numbers: | 210 | : 202 |
| Engine numbers: | 513 | : 1654 |
| Consist: | 11 cars | : 7 cars |
| Speed: | Standing | : 25-40 m. p. h. |
| Operation: | Timetable and train orders | |
| Track: | Single; tangent; 0.025 percent ascending grade eastward | |
| Weather: | Clear | |
| Time: | About 7:12 a. m. | |
| Casualties: | 5 killed; 78 injured | |
| Cause: | Accident caused by failure to provide adequate flag protection for preceding train | |
| Recommendation: | That the Chicago, St. Paul, Minneapolis & Omaha Railway Company establish an adequate block-signal system on the line involved in this accident | |

INTERSTATE COMMERCE COMMISSION

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INVESTIGATION NO. 2579

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910.

THE CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA RAILWAY COMPANY

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June 6, 1942.

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Accident at Savage, Minn., on April 11, 1942, caused by failure to provide adequate flag protection for preceding train.

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REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On April 11, 1942, there was a rear-end collision between two passenger trains on the Chicago, St. Paul, Minneapolis & Omaha Railway at Savage, Minn., which resulted in the death of 3 passengers, 1 news-service employee, and 1 train-service employee, and the injury of 86 passengers, 4 railway-mail clerks, 1 Pullman employee, 2 dining-car employees, 1 employee off duty and 4 train-service employees. This accident was investigated in conjunction with a representative of the Minnesota Railroad and Warehouse Commission.

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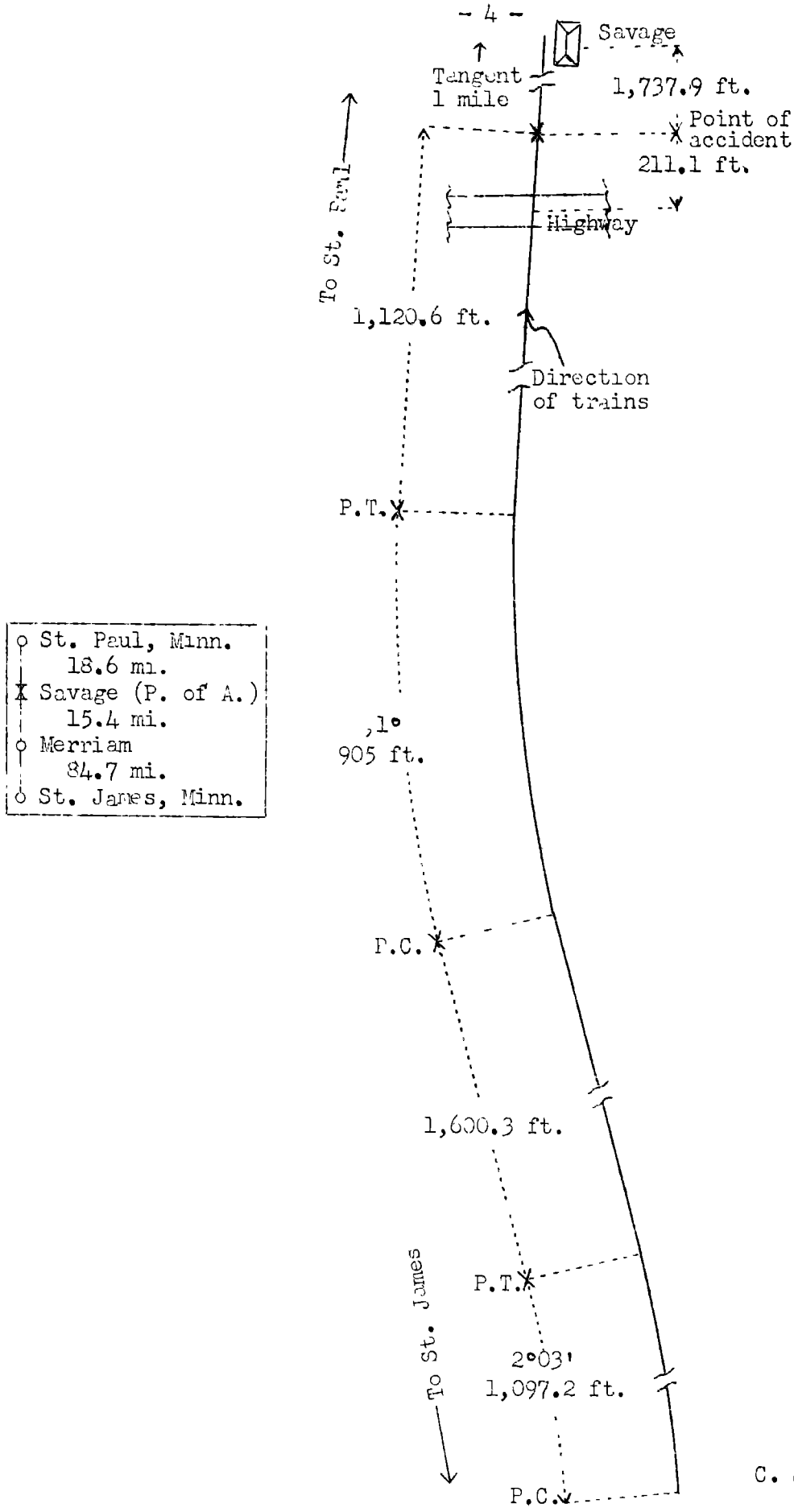
[1]Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.




Inv. No. 2579
C. St. P. M. & O. Ry.,
Savage, Minn.
April 11, 1942

Location of Accident and Method of Operation

This accident occurred on that part of the Western Division designated as the Mankato Sub-division, which extends between St. James and St. Paul, Minn., a distance of 118.7 miles. In the immediate vicinity of the point of accident this is a single-track line over which trains are operated by timetable and train orders. There is no block system in use. In the vicinity of the point of accident the compass directions of the track are east and west. The accident occurred at a point 1,738 feet west of the station at Savage and 211 feet east of the point where a highway designated as Route 16 crosses the railroad at grade. As the point of accident is approached from the west there are, in succession, a $2^{\circ}03'$ curve to the left 1,097.2 feet in length, a tangent 1,600.3 feet, a $1^{\circ}$ curve to the right 905 feet and a tangent 1,120.6 feet to the point of accident. At the point of accident the grade for east-bound trains is 0.025 percent ascending.

Operating rules read in part as follows:

86. When a train of one schedule is on the time of another schedule of the same class in the same direction, it will proceed on its own schedule.

* * *

99. When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing two torpedoes, and when necessary, in addition, displaying lighted fusees. * * *

* * *

99c. A train moving contrary to its normal direction without proper authority must be preceded by a flagman sent far enough in advance of the movement to insure absolute protection.

PASSENGER TRAINMEN

934. The trainman acting as flagman, must * * * protect the rear of the train * * *. His position on the train while running is on the rear car when practicable, except on trains carrying private cars and observation cars on the rear, * * *.

* * *

In the vicinity of the point of accident the maximum authorized speed for passenger trains is 70 miles per hour.

## Description of Accident

No. 210, an east-bound first-class passenger train, consisted of engine 513, 1 baggage car, 1 mail-baggage car, 1 baggage car, 2 coaches, 2 Pullman sleeping cars and 4 baggage cars, in the order named. All cars were of steel construction. After a terminal air-brake test was made this train departed from St. James, 100.1 miles west of Savage, at 3:53 a. m., according to the dispatcher's record of movement of trains, 23 minutes late, departed from Merriam, 15.4 miles west of Savage and the last open office, at 6:33 a. m., 17 minutes late, and while moving at an estimated speed of 40 to 45 miles per hour it collided with an automobile at a highway grade crossing 1,949 feet west of the station at Savage. The train stopped with its rear end standing about 985 feet west of the station at Savage. Soon afterward the train moved backward and stopped with the rear end standing 1,738 feet west of the station. About 17 minutes after the collision with the automobile the rear end of No. 210 was struck by No. 202.

No. 202, an east-bound first-class passenger train, consisted of engine 1654, 1 baggage car, 2 coaches, 1 Pullman tourist car, 2 Pullman sleeping cars and 1 cafe-lounge car, in the order named. All cars were of steel construction. At St. James a terminal air-brake test was made and the brakes functioned properly at all points where used en route. This train departed from St. James at 4:49 a. m., according to the dispatcher's record of movement of trains, 24 minutes late, passed Merriam at 6:54 a. m., 20 minutes late, and while moving at an estimated speed of 25 to 40 miles per hour it collided with the rear end of No. 210.

Because of track curvature, from the right side of an east-bound engine the view of a coach standing at the point of accident is restricted to a distance of about 1,900 feet.

The force of the impact moved No. 210 forward about 15 feet. The front pair of wheels of the rear truck of the rear car was derailed and the car was telescoped a distance of 29 feet 10 inches by the engine of No. 202. The other cars in this train were slightly damaged. The front end and the cylinder assembly of engine 1654 were demolished. The second car of No. 202 telescoped the first car a distance of 44 feet and both cars were practically demolished.

It was clear and the sun was shining brightly at the time of the accident, which occurred about 7:12 a. m.

The train-service employee killed was the front brakeman of No. 202, and the train-service employees injured were the engineer, the fireman, the baggageman and the flagman of No. 202.

Data

After the occurrence of the accident marks made by exploded torpedoes were found on the head of the south rail at points 2,109 feet and 2,178 feet west of the point of accident. The remains of a freshly burned fusee were found at a point 2,496 feet west of the point of accident.

A test disclosed that a person starting from the point of accident and walking briskly westward during a period of 15 minutes could reach a point 4,660 feet west of the point of accident.

During the 30-day period preceding the day of the accident, the average daily movement in the vicinity of the point of accident was 10.46 trains.

According to the timetable, No. 202 was due to leave Berden, 3.5 miles west of Savage and the last station in the rear where time is shown, at 6:52 a. m.

Discussion

The rules governing operation on the line involved provide that when a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection. A train must not move in a direction contrary to its authorized direction without authority, unless it is preceded by a flagman a distance sufficient to insure absolute protection. All surviving members of both crews involved understood these requirements.

As No. 210 was approaching Savage the speed was about 40 or 45 miles per hour and both enginemen were maintaining a lookout ahead. The bell was ringing and the engineer sounded the engine-whistle signal for Route 16. When the engine passed over the crossing the fireman informed the engineer that the engine had struck an automobile. According to the statement of the fireman, the automobile was approaching from the north at a speed of 20 or 30 miles per hour and it moved upon the crossing immediately in front of the engine. Since the driver was killed in the accident it could not be determined why he failed to stop short of the crossing.

After No. 210 collided with the automobile, the train stopped at 6:55 a. m. with its rear end standing 985 feet east

of the crossing. The engineer immediately sounded the engine-whistle signal for the flagman to provide flag protection. About 6:57 a. m. this train moved backward and stopped with its rear end standing 211 feet east of the crossing involved. About 7:12 a. m. the rear end of No. 210 was struck by No. 202. The conductor and the flagman of No. 210 said that the flagman started toward the rear immediately after the train stopped the first time. Other members of the crew said that the flagman was only a short distance to the rear of the train after it completed the back-up movement.

According to the statements of the enginemen of No. 202, as their train was approaching the point where the accident occurred, the speed was about 70 miles per hour, and they were maintaining a lookout ahead. Because of looking directly toward the rising sun, which was shining brightly, it was difficult to see objects ahead of the engine. The engineer said that he first observed the flagman of No. 210 at a distance of about 150 feet, that the flagman was giving stop signals with a red flag at a point about 1,100 feet west of the point where the accident occurred, and that torpedoes were exploded at a point about 200 feet farther east. The engineer said that immediately after he observed the flagman, he moved the brake valve to emergency position and placed the reverse lever in position for backward motion, but the distance was not sufficient to stop short of the rear end of No. 210. The flagman of No. 210 said that he placed torpedoes at a point about 2,400 feet to the rear of his train and gave stop signals to No. 202 with a red flag in one hand and a lighted red fusee in the other from a point about 2,700 feet west of his train; however, the point where he said he was stationed is about 2,500 feet west of the point of accident. The fireman of No. 202 said that he observed the flagman giving stop signals with a lighted red fusee at a distance of 150 feet in front of his engine. The fireman was confused as to the location of the flagman and first said he was at a point about 1,500 feet west of the point where the accident occurred and afterward said he was about 2,000 feet west of the point of accident. The fireman said that he warned the engineer, who immediately made an emergency application of the brakes. The baggageman of No. 202 said that immediately after the emergency application of the brakes he observed his train passing an overhead bridge located 878 feet west of the point of accident. The conductor said that the collision occurred about 25 seconds after the brake application. The section foreman at Savage said that he was standing at the rear of No. 210 and heard No. 202 explode two torpedoes, and that immediately afterward No. 202 passed through the overhead bridge located 878 feet west of the point of accident. The brakes of No. 202 had functioned properly en route. The investigation of this accident disclosed that the brakes of No. 202 were applied in

emergency about the location of the flagman. The engineer said that the speed of his train was about 30 or 35 miles per hour at the time of the collision, and, as evidenced by the resultant damage, the speed was relatively high.

From the time No. 210 first stopped at Savage to the time the collision occurred the flagman had about 17 minutes in which to provide flag protection. After the accident, a test disclosed that a person walking briskly could proceed westward from the point of accident a distance of 4,660 feet during a period of 15 minutes. Had the flagman proceeded approximately this distance to the rear, undoubtedly he would have been able to provide adequate flag protection.

In the vicinity of the point of accident there is no restriction to prevent a following passenger train from proceeding at the maximum authorized speed of 70 miles per hour. The rules require that flag protection be provided a sufficient distance for following trains to stop from their maximum authorized speeds short of a preceding train. Savage is a flag stop for No. 210 and trains operating on that schedule are required to approach the station prepared to stop. No. 202 is not required to stop at Savage. When No. 210 was approaching Savage, its speed did not exceed 45 miles per hour and No. 202 was 3 minutes overdue at Barden, 3.5 miles west of Savage. At that time, according to the statements of the flagman and the conductor, the flagman was stationed in the fifth car from the rear and his flagging equipment was in the rear car. Both said that because the rear four cars were baggage cars there was no place for the flagman to station himself at the rear of the train. There was evidence that other flagmen did not station themselves at the rear of their trains when baggage cars were on the rear end. The flagman said that he had never been criticized by supervisory officials for not stationing himself at the rear of a train when baggage cars were at the rear. If the flagman had not been delayed in proceeding to the rear of the train and in obtaining his flagging equipment, he might have been able to proceed to the rear far enough to stop No. 202 short of No. 210. Furthermore, if No. 210 had not been moved backward until adequate flag protection was provided, probably the additional distance would have been sufficient for stopping No. 202 short of No. 210.

In the territory involved, trains are operated by timetable and train orders only. If an adequate block system had been in use in this territory, this accident would have been averted. This carrier has an automatic block-signal system in operation between Mankato, Minn., and Merrian, Minn., a distance of 50.2

miles. The eastern end of this system is located 15.4 miles west of Savage.

## Cause

It is found that this accident was caused by failure to provide adequate flag protection for the preceding train.

## Recommendation

It is recommended that the Chicago, St. Paul, Minneapolis & Omaha Railway Company establish an adequate block-signal system on the line involved in this accident.

Dated at Washington, D. C., this sixth day of June, 1942.

By the Commission, Commissioner Patterson.

W. P. BARTEL,

(SEAL)

Secretary.